

ABSTRACT OF THE DISCLOSURE

An atomic lithography apparatus for depositing atoms included in an atomic beam on a substrate to manufacture an periodic atomic structure, comprising an atomic oven having a pin hole, a collimator for collimating an atom gas effused from the atomic oven to generate an atomic beam, four lasers for irradiating laser beams on the atomic beam to control the spreading angle of the atomic beam, two lasers for forming an optical standing wave at a part of a space in which the atomic beam is propagated, an electro-optic element for controlling the phases of the optical standing wave for controlling the propagation direction of the atomic beam, an electro-optic element drive device for controlling a voltage applied to the electro-optic element to control a refraction index of the electro-optic element, and a control device for controlling the electro-optic element drive device.